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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,060

06/05/2007

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EXAMINER

DUNN, DARRIN D

ART UNIT

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2121

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,060	Applicant(s) MEUSBURGER ET AL.	
	Examiner DARRIN DUNN	Art Unit 2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/22/2006, 07/25/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is responsive to the communication filed on 06/05/2007.
2. Claims 1-10 are pending in the application.

Priority

3. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 10/580060, filed on 06/05/2007.
4. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

5. The information disclosure statement (IDS) submitted on 07/25/2006 and 05/22/2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

6. Claim 1, line 4, claims 'oversize' but does not reference what is being referred to. Further, claims 1,7, and 8 use a sentence fragment, i.e., 'device for producing..' Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 1 recites the limitation "the contour" in line 2. However, it is unclear whether the contour refers to a finished contour or unfinished contour. There is insufficient antecedent basis for this limitation in the claim.

9. Claim 1 recites the limitation "the difference" in line 4. There is insufficient antecedent basis for this limitation in the claim.

10. Claim 1 recites the limitation 'the actual contour' in line 6. There is insufficient antecedent basis for this limitation in the claim.

11. Claim 1 recites the limitation 'the values' in line 9. There is insufficient antecedent basis for this limitation in the claim.

12. Claim 1 recites the limitation 'the delivery' and 'the grinding agent' in line 10. There is insufficient antecedent basis for this limitation in the claim.

13. Claim 3 recites the limitation 'the present grinding task.' There is insufficient antecedent basis for this limitation in the claim.

14. Claim 7 recites the limitation 'the grinding parameters' in line 4.' There is insufficient antecedent basis for this limitation in the claim.

15. Claim 7 recites the limitation 'the grinding means' in line 5.' There is insufficient antecedent basis for this limitation in the claim.

16. Claim 7 recites the limitation 'the unfinished contour' in line 8.' There is insufficient antecedent basis for this limitation in the claim.

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17. Claim 7 recites the limitation 'the values of the contour' in line 15.' There is insufficient antecedent basis for this limitation in the claim.

18. Claim 8 recites the limitation 'the contour of the unfinished part' in line 3.' There is insufficient antecedent basis for this limitation in the claim.

19. Claim 8 recites the limitation 'the last step' in line 5.' There is insufficient antecedent basis for this limitation in the claim.

20. Claim 8 recites the limitation 'the grinding process' in step a). There is insufficient antecedent basis for this limitation in the claim.

21. Claim 8 recites the limitation 'the values' in step b). There is insufficient antecedent basis for this limitation in the claim.

22. Claim 8 recites the limitation 'the actual contour in step c) There is insufficient antecedent basis for this limitation in the claim.

23. Claim 8 recites the limitation 'the supplying of grinding agent' in step c) There is insufficient antecedent basis for this limitation in the claim.

24. Claim 8 recites the limitation 'the remaining grinding programs' in step c) There is insufficient antecedent basis for this limitation in the claim.

25. Claim 8 recites the limitation 'the control of the delivery' in step c) There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

26. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

27. Claims 1-7 rejected under 35 U.S.C. 102(b) as being anticipated by Sano et al. (USPN 20020066197).

28. As per claim 1, Sano et al. teaches 1 a device for producing a finished contour of a work piece having the contour of an unfinished part by grinding in several steps ([Figure 1], [Figure 4], [0032], [ABSTRACT] preferably at cam lobes (2) of a camshaft ([Figure 1- element 20], [0032]), comprising a grinding machine (3) ([Figure 1- element 1] ,[0032]) which has grinding means for grinding away an oversize corresponding to the difference between the contour of an unfinished and that of a finished part ([0017] , [0039-42] e.g., machining a work piece includes grinding a specified portion, i.e., unfinished, to produce a finished product in accordance with the machine program), and a control device (4) ([Figure 1- elements 32,36], [0039 e.g., CNC) for controlling the grinding machine (3) ([0039]) , characterized in that a measuring device (13) ([Figure 1 –element 25] e.g., measuring apparatus) for measuring the actual contour of the unfinished part of the work piece is provided ([0038]), which is coupled directly or indirectly by means of at least one data transfer device (9, 10, 11, 12a, 12b) ([Figure 1- element 37], [0041]) with the control device (4) (e.g., it is understood that measured data is transferred for processing via the interface) , so that the values determined by the measuring device (13) can be supplied to the control device (4) ([0042] e.g., storage) and at least specified values for controlling the

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delivery of the grinding agent can be determined from these measured values by the control device (4) ([0042], [0049], [0051] e.g., specified values include ideal profile data based on trial grinding. Feedback control is effectuated such that rotation and position change according to the corrected profile such that continuous contact is maintained, in effect limiting 'air grinding.')

29. As per claim 2, Sano et al. teaches the device of claim 1, characterized in that a measuring unit (13) is disposed separately from the grinding machine (3) (Figure 1 -element 25 is disposed from element 1) and that a device for transporting the work piece is provided between the measuring device (13) and the grinding machine (3) ([0055] e.g. table 11)

30. As per claim 3, Sano et al. teaches the device of claims 1 or 2, characterized in that a plant control computer (5) ([Figure 1 –element 32]), to which the values from the measuring device (13) ([0038] e.g., measurement data) are to be supplied over the first data transfer device (9)(e.g., interface and bus are taught) is connected between the measuring device (13) and the control device (4) ([0038], CNC controller), so that a grinding program (Figure 1- element machine operation program], [0098]), which is suitable for the present grinding task and can be transferred over a second data transfer device (11) ([0038], [Figure 1-element 37]) to the control device (4) ([Figure 1], [0039] e.g., CNC), can be selected via the plant control computer (5) on the basis of the values measured ([Figure 7], [0051] e.g., it is understood that rough and/fine grinding is imposed based on the measured position)

31. As per claim 4, Sano et al. teaches the device of one or more of claims 1 to 3, characterized in that means are provided, with which the values, determined by the measuring device (13), and/or the grinding program selected can be assigned directly or indirectly to the individual work piece

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([0039 -element 31] e.g., means for grinding a work piece in accordance with programmed instructions - element 36)

32. As per claim 5, Sano et al. teaches the device of claim 4, characterized in that the means assign to the work piece a coding ([0049] e.g., interpreted as instructions for grinding a piece to a desired shape where the CNC may make necessary changes to a grinding operation based on measured data) containing the values measured ([Figure 1 –element 36 (ideal p/f, corrected p/f, re-corrected p/f) and that further means are provided, which can read the coding when the work piece is placed in the grinding machine (3) ([0038] e.g., measurement apparatus)

33. As per claim 6, Sano et al. teaches the device of one of the claims 1 to 5, characterized in that means are provided with which work pieces, after the contour of unfinished parts are measured in the measuring device (13), are not supplied for further processing if the measured contour of the unfinished parts falls below the contour of the finished parts by more than a permissible tolerance range ([Figure 4-element S10, S12] e.g., interpreted that when grinding conforms to a respective tolerance, the operation is finished)

34. As per claim 7 Sano et al. teaches a device for grinding a finished contour of cam lobes (2) of a camshaft (1) with a grinding machine (3) and a control device controlling the latter ([Figure 1 elements 20, 1]), grinding programs ([Figure 1 –element 36], [0098]) being specifiable by the control device (4) and containing specified values ([0098], [0099] e.g., program variables) for the grinding parameters of the RPM of the grinding means ([0082] e.g., cutting feed rate) and/or of the work piece, when RPM of the grinding means and/or of the work piece, rate of advance, delivery and axial position of the work piece, characterized in that at least the following components are provided:

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a measuring device (13) for measuring the unfinished contour of the work piece, which is to be ground ([0038], [0102-0106] e.g., measurement apparatus),

a plant control computer (5) ([0039 –element 32) for determining and/or selecting one or more grinding programs ([Figure 1] ,[0042], [0098-0100] e.g., rough vs fine grinding program), a first data-transfer device (9) ([0039], [Figure 1-element 37] e.g., interface) between the measuring device (13) ([0038] e.g., measurement apparatus) and the plant control computer (5) ([0039] element 32) as well as a second data transfer device (11) ([0039] e.g., interface) between a plant control computer (5) and the control device (4), it being possible (e.g., interpreted as possessing the capability) to supply the values of the contour (e.g., diameter, circumference) of the unfinished part, measured by the measuring device (13), over the first data transfer device (9) to the plant control computer (5) ([Figure 1 –element 31], [0103-0106] e.g., data via the measurement apparatus is supplied to the CPU as to determine the diameter and/or circumference of the work piece) and, depending on these values, to determine and/or select at least one grinding program ([Figure 4- element S14] e.g., rough or fine grinding) in the plant control computer and supply it over the second data transfer device (11) (e.g., interface) to the control device (4) and to control the grinding machine (3) from the control device (4) one in accordance with the grinding program determined and/or selected (e.g., either rough or fine grinding is selected, among other things such as the measurement programs)

35. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated Imai et al. (USPN 553931).

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35. As per claim 8, Imai et al teaches a method for producing a finished contour of a work piece having an unfinished contour by grinding in several steps, preferably at cam lobes (2) of a camshaft (1), for which the contour of the unfinished part of the work piece is ground away in each step by a specifiable amount, so that the finished contour of the work piece is present after the last step, characterized by the following steps:

- a) the contour of the unfinished part of the work piece is measured the grinding process is commenced ([Figure 4a- element S101], [COL 6 lines 15-20] e.g., contour, i.e., diameter, is measured)
- b) the values determined are transmitted directly or indirectly to a control device (4) ([Figure 4b- elements s105-s106] [Figure 2-element 40] e.g., control device);
- c) depending on these values measured, either a grinding program is calculated ([Figure 4a, Figure 4b] e.g., grinding program is calculated in step s105-s106), which is adapted (e.g., non-limiting claim language, supra MPEP 2111.04 [R-3]) to the actual contour (e.g., diameter and/or surface of work piece) of the unfinished part and for which the supplying of grinding agent (e.g., grinding wheel) to the grinding machine (3) is controlled taking into consideration the actual contour of the unfinished part ([Figure 4b—element S105], [Col 5 lines 65-67], [COL 6 lines 1-5] e.g., an angle based on the diameters would enable the grinding wheel to effectively grind a workpiece, i.e., grinding resistance is decreased. The claim language ‘taking into consideration’ is interpreted that as grinding progresses, the grinding operation will stop when the desired shape has been completed by the grinding operation. Therefore, the actual contour of at least one dimension must be taken into otherwise the system would fail to produce a desire shape), or a specified and stored grinding program is selected, for which, in comparison to the remaining

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grinding programs that may be selected, the control of the delivery of the grinding agent of the grinding machine (3) is adapted best to the actual contour of the unfinished part.

Claim Rejections - 35 USC § 103

36. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

37. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

38. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imai et al. (USPN 5533931) in view over Sano et al. (USPN 20020066197).

39. As per claim 9, Imai et al. teaches grinding program with several steps that cannot be changed ([Figure 4a-b] e.g., interpreted that a set sequence of steps are provided for and therefore are not depicted as being modifiable, i.e., changed). However, Imai et al. does not teach skipping a grinding step depending on the measure values of the unfinished, contour of the

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part. Sano et al. teaches that when a ground crankpin is unsatisfactory, grinding of the crankpin is stopped ([0073-74] e.g., skipping a grinding operation)

Therefore, at the time the invention was made, one of ordinary skill in the art would have motivation to skip a grinding step when it is determined that the crankpin is unsatisfactory. Since skipping a grinding step saves time and promotes efficiency, it would have been obvious to one of ordinary skill in the art to control future grinding steps as a function of measured tolerances (e.g., diameter and eccentricity) of a work piece.

36. As per claim 10, Sano et al., as modified, teaches the method of claim 1, characterized in that, in addition to the first grinding step, further grinding steps that follow the first one are skipped ([0051] e.g., when a grinding operation is stopped, it is interpreted that future grinding operations, i.e., fine grinding and spark out grinding, are not realized and therefore are skipped)

Conclusion

40. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

41. 4570389

42. 4884373

43. 5815400

44. 5919081

45. 6098452

46. 6234869

47. 6298279 (e.g., feedback control)

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- 48. 6623332 (e.g., adaptive grinding)
- 49. 7367756
- 50. 20040074073
- 51. 20050211029 (e.g., skipping a grinding step)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DARRIN DUNN whose telephone number is (571)270-1645. The examiner can normally be reached on EST:M-R(8:00-5:00) 9/5/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DD
12/05/08

/Albert DeCady/
Supervisory Patent Examiner
Art unit 2121